

REMARKS

Claims 1-27 and 29-32 are pending and claims 1-27 and 29-32 stand rejected. By virtue of this response, no claims have been cancelled, amended, or added. Accordingly, claims 1-27 and 29-32 are currently under consideration.

Claim Rejections Under 35 USC §102

Claims 1, 2, 4-6, 9-14, 17-20, 22-24, 27, 29, 30, and 33 stand rejected under 35 U.S.C. 102(b) as being anticipated by Wilson (U.S. Patent no. 6,213,705).

The Examiner states on Page 2 of the final Office Action, *inter alia*:

“Wilson teaches...a processor (62) serving as a controller for determining the presence of the tape based on the magnitude threshold or a frequency components from the sensor, that is, the proximity sensor determines the presence/absence of the tape cartridge by determining the magnitude of the reflected optical signal (e.g., the tape cartridge is presence [sic] if reflected optical signal is above predetermined magnitude threshold and the tape cartridge is absence [sic] if reflected signal is below predetermined magnitude threshold.” (Emphasis added).

Further, in response to Applicants previous response and argument that Wilson fails to disclose or suggest determining the presence of a storage device based on “frequency components,” and under the heading “Response to Arguments,” the Examiner states on pages 5-6:

“...the Examiner respectfully disagrees with the applicant wherein the magnitude of the optical signal can be considered as frequency components, in fact the optical signal such as LED signals of Wilson is inherently defined by amplitude, magnitude, frequency, etc. Moreover, the applicant admits that the present invention also uses the magnitude of frequency for determine the presence or absence of the cartridge (see paragraph 0034 of specification).”

Applicants respectfully traverse the rejection and submit that the Examiner is misinterpreting either the features of the present claims, the Wilson reference, or both. Claim 1, for example, recites that the controller determines the presence of a storage device “based on frequency components of a signal associated with a linear scan by the sensor.” (Emphasis added). As clearly

described in the present application, for example, in paragraphs [0021], [0034], [0043], and [0044], a signal associated with a linear scan (e.g., by a linear scanner or portion of an area scanner) when a cartridge is present includes “relatively sharp, high frequency component peaks across the face of the cartridge 414 as indicated by bracket 420,” (see Fig. 5B). This is compared to the “smoothness, or relatively low frequency components in the middle section of the graph indicated by bracket 430,” (see Fig. 5C) associated with the absence of a cartridge. Thus, the presence or absence of a storage device is determined from frequency components (e.g., relative amplitude or frequency peaks, smoothness, etc.) of a signal associated with a linear scan by the sensor and not a magnitude or intensity of the detected light.

An example of the features of claim 1 are best illustrated by comparing Fig. 5B of the present application, which includes relatively sharp, high frequency components indicated by the region identified by bracket 420 (and associated with the presence of an unlabeled cartridge 414) with Fig. 5C, which includes relative smooth, low frequency components indicated by bracket 430 (and associated with the absence of a cartridge). The frequency components vary, in one example, because the depth of focus of the system is near the front of the expected position of the cartridge position such that reflections from the back of the storage slot are imaged out of focus, resulting in a smooth, low frequency detected signal when the cartridge is absent.

In contrast to the features of the present claims, Wilson discloses or suggests determining the presence of storage device based on an intensity of the signal (e.g., “strong” or “weak”). This disclosure does not suggest determining the presence of a storage device based on “frequency components” of a signal from the sensor. In particular, Wilson clearly describes (including the portions of Wilson cited by the Examiner) that proximity sensor 48 senses “weak” optical signals “having a magnitude below a given magnitude threshold” for an empty slot and proximity sensor 48 detects “strong” optical signals “having a magnitude above the given magnitude threshold” if a cartridge is present. (Wilson: col. 5, lines 33-48). The determination is based merely on whether the optical signals reflected by the tape cartridge or empty slot are above or below a given threshold “magnitude” or “intensity.” (See also, Wilson: col. 6, lines 31-52).

There is no disclosure or suggestion in Wilson, however, that the determination is based on “frequency” or “frequency components” of the detected optical signal as recited by claim 1.

In practice, for example, the system of Wilson could make an incorrect presence determination in an example where the slot reflects more light than expected, e.g., if a label is present in the back of the slot resulting in a similar amount of light reflected when a cartridge is present. However, if “frequency components” are used as presently recited, an exemplary system may determine the absence of the cartridge because the features at the back of the slot will be out of focus, thereby resulting in relatively low frequency components of the linear scan. Therefore, the relative magnitude of the “frequency components” of the linear scan are used to determine the presence of a cartridge in claim 1, and not the relative “intensity” of detected light (as described by Wilson).

Furthermore, even if the “LED signals of Wilson is inherently defined by amplitude, magnitude, frequency, etc,” as asserted by the Examiner, this falls short of disclosing or suggesting the features of claim 1. In particular, Wilson does not disclose or suggest that the frequency of any detected optical signal is used in a manner as recited by claim 1 (i.e., there is no disclosure of determining the presence or absence of a storage device based on “frequency” or “frequency components” of a signal as recited by claim 1). In other words, whether the LED signal of Wilson is inherently defined by a frequency is beside the point; Wilson does not disclose or suggest the use of frequency or “frequency components” to determine the presence of a storage device as presently recited by claim 1.

Applicants further note that in maintaining a rejection based on inherency, the rationale or evidence “must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations omitted) (emphasis added); MPEP §§ 2112, 2131.01. In this instance, Wilson is silent regarding the use of “frequency” or “frequency components,” of the detected optical signal (even if the optical signal inherently includes a frequency). The Examiner

has not provided any evidence to show that using “frequency components” to determine the presence of a storage device is necessarily present by the disclosure of the LED, detector, etc. of Wilson. In this instance, Wilson does not disclose the specifics of an algorithm or the like for making a presence determination and only references magnitude and intensity of the detected light. Therefore, Wilson clearly does not necessarily or otherwise disclose or suggest the features of claim 1.

Applicants further submit the Examiner’s citation to paragraph [0034] of the present application is misplaced and is consistent with the difference between the features of claim 1 and Wilson. In particular, paragraph [0034] recites: “If a cartridge 214 is not present...linear scanner 250 will detect and image relatively low frequency features. If an unlabeled cartridge 214 is present...linear scanner 250 will detect and image relative high frequency features. The relative magnitude of frequencies output by linear scanner 250 may be used [to] determine the presence or absence of a cartridge 214.” As clear from the context of paragraph [0034], the reference to “magnitude of frequencies” is a reference to the “frequency components” of the detected signal, and not a magnitude or intensity of the detected light as used by Wilson.

Therefore, as previously stated, Wilson fails to disclose or suggest determining the presence of a storage device based on “frequency components” of a signal from the sensor as recited by the present claims. Claim 1, for example, recites that the controller determines the presence of a storage device “based on frequency components of a signal associated with a linear scan by the sensor.” (Emphasis added). Thus, determining the absence or presence of a storage device based on the “frequency components of a signal” associated with a linear scan by the sensor as recited by claim 1 is not equivalent to detecting and comparing a “magnitude” of a signal intensity to a threshold value as disclosed by Wilson. Accordingly, Wilson does not disclose or suggest each and every feature of claim 1 and the rejection must be withdrawn.

Further, with regard to the other independent claims, claim 11 (which has not been amended) recites determining the presence of a storage device “based on frequency components of an output from the linear scanner.” Claim 19 recites determining if a storage device is within a

storage slot “based on frequency components from an output signal of the sensor associated with a linear scan by the sensor.” Claim 27 recites determining if a storage device is located within a storage slot “based on frequency components of analog data associated with a linear scan by the sensor.” As discussed with respect to claim 1, Wilson clearly fails to disclose or reasonably suggest determining the presence/absence of a storage device based on “frequency components” of a signal from the sensor.

Therefore, Wilson does not disclose or reasonable suggest the features of claims 1, 11, 19, and 27 (or claims that depend there from), and the rejection must be withdrawn.

Claim Rejections under 35 USC §103

A. Claims 3, 21, and 34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Lignoul (U.S. Patent No. 6,374,145).

Claims 3, 21, and 34 depend from independent claims 1, 19, and 27 and are allowable over Wilson for at least similar reasons as claims 1, 19, and 27. The addition of Lignoul does not cure the deficiencies of Wilson nor is Lignoul alleged to in the Office Action. Accordingly, Applicants request that the rejection be withdrawn.

B. Claims 7, 8, 15, 16, 25, 26, 31, and 32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson.

Claims 7, 8, 15, 16, 25, 26, 31, and 32 depend from independent claims 1, 19, and 27 and are allowable over Wilson for at least similar reasons as claims 1, 19, and 27. Accordingly, Applicants request that the rejection be withdrawn.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 249212021400. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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